

CLAIMS

1. A light emitting device comprising:

5 a light emitting element having an electric signal terminal, which is driven to emit light by an electric signal given to the electric signal terminal from outside; and

10 a semiconductor chip for driving the light emitting element, having a light emitting element drive circuit that is made of a semiconductor, outputs and applies the electric signal to the electric signal terminal,

wherein the light emitting element is mounted on the surface of the semiconductor chip for driving the light emitting element.

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2. The light emitting device according to claim 1, wherein the semiconductor chip for driving the light emitting element has:

20 a protective circuit that protects the light emitting element or the light emitting element drive circuit from static electricity or high voltage applied from the outside; and

25 a protective terminal that connects the protective circuit electrically to the outside; wherein the protective terminal is connected to the

electric signal terminal of the light emitting element.

3. The light emitting device according to claim 2,
wherein the protective circuit has one or a plurality of
5 elements made by a same manufacturing method as elements
forming the light emitting element drive circuit of the
semiconductor chip for driving the light emitting element.

4. The light emitting device according to claim 1,
10 wherein a plurality of light emitting elements formed from
different chips are mounted on the surface of the
semiconductor chip for driving the light emitting element,
and

the semiconductor chip for driving the light
15 emitting element has a conductive path for mutually
connecting the light emitting elements.

5. The light emitting device according to claim 4,
wherein the conductive path is made of a diffusion layer or
20 a metal wiring layer formed by same processing method as a
diffusion layer or a metal wiring layer forming the light
emitting element drive circuit in the semiconductor chip
for driving the light emitting element.

25 6. The light emitting device according to claim 4,

wherein the conductive path has a resistance having a specified value.

7. The light emitting device according to claim 1,
5 wherein the light emitting device has a plurality of visible light emitting elements emitting light at different wavelengths.

8. The light emitting device according to claim 7,
10 wherein the light emitting elements include plural visible light emitting elements emitting three primary colors of red, green and blue.

9. The light emitting device according to claim 7,
15 wherein the plurality of light emitting elements are disposed closely to a focus of a transmission type condensing lens combined in the light emitting device.

10. The light emitting device according to claim 7,
20 wherein the plurality of light emitting elements are disposed near a focus of a reflection plane combined in the light emitting device.

11. A lighting device comprising:
25 a plurality of light emitting devices according

to claim 1, each of that has the semiconductor chip for driving a light emitting element, having a constant current circuit that applies a specified current to the light emitting element or a constant voltage circuit that applies
5 a specified voltage to the light emitting element.

12. A semiconductor chip for driving light emitting elements, on which the light emitting elements can be mounted, each of the light emitting elements having an
10 electric signal terminal and being driven to emit light by an electric signal given to the electric signal terminal, the semiconductor chip comprising:

a light emitting element drive circuit that is made of a semiconductor, outputs and applies the electric
15 signal to the electric signal terminal; and

a conductive path that mutually connects the electric signal terminals of the plurality of light emitting elements.

20 13. The semiconductor chip for driving light emitting elements according to claim 12, wherein P (P is a positive integer of 1 or more) light emitting elements formed by different chips and circuit elements of the light emitting element drive semiconductor circuit are mutually connected
25 through bumps provided on the conductive path.

14. The semiconductor chip for driving light emitting elements according to claim 13, wherein the conductive path has a conductive path shape such that Q (Q is a positive integer different from P) light emitting elements having nearly same shape as P light emitting elements are operable to be mounted, instead of P light emitting elements.

15. The semiconductor chip for driving light emitting elements according to claim 12, further comprising:

an external connection terminal that varies the value of current or voltage for driving light emitting elements.